



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,495	09/02/2003	Masayuki Kumakura	116882	2708
25944	7590	06/20/2005	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			PAREKH, NITIN	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 06/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/652,495

Applicant(s)

KUMAKURA, MASAYUKI

Examiner

Nitin Parekh

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art (APA) in view of Matsuura et al. (US Pat. 2001/0015484).

Regarding claims 1-4, the APA discloses a hard disk device comprising an insulating sheet (110 and 113 respectively in Fig. 5), the insulating sheet further comprising:

- a buffer layer (121 in Fig. 5) having buffering attributes, the buffer layer being formed of an urethane foam (see prior art: comparative example 2 in Table 2, page 8).
- an adhesive layer (122 in Fig. 5), and
- an insulating resin film (123 in Fig. 5) formed from polyethylene terephthalate/PET (see prior art: comparative example 2 in Table 2, page 8), wherein the buffer layer and the resin film are attached together by the adhesive layer

(Fig. 5 and 6; specification pp. 1, 2, 8 and 9; Table 2).

The APA fails to teach the adhesive layer not being adhesive at normal ambient temperature but exhibiting adhesiveness when heated.

Matsuura et al. teach using a variety of polyester/polyether based heat resistant resin compositions including those without a silicon component (section 0026; 0192; Col. 2-13) to provide improved adhesion/bonding between a variety of substrates/layers (sections 0229 and 0230) where the adhesion/bonding is performed under compression and heat treatment and the temperature of the heat treatment is higher than normal ambient temperature (see sections 0206-0212).

It would have been obvious to a person of ordinary skill in the art at the time invention was made to incorporate the adhesive layer not being adhesive at normal ambient temperature but exhibiting adhesiveness when heated as taught by Matsuura et al. so that the adhesion/bonding, crack resistance and reliability can be improved and moisture absorption can be reduced in the APA's device.

Regarding claim 1, heating the adhesive layer to exhibit adhesiveness, do not distinguish over the APA and Matsuura et al., because only the final product/structure is relevant, not forming the adhesiveness using the "heating", "compressing", "pressurizing and heating" or "softening, curing or melting". Note that a "product by process" claim is directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wertheim*, 191 USPQ

90 (209 USPQ 554 does not deal with this issue); and In re Marrosi et al., 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 706.03(e).

Regarding claims 5-8, the APA and Matsuura et al. teach substantially the entire claimed structure as applied to claims 1-4 above, wherein the APA teaches hard disk device comprising:

- a case (11 in Fig. 5) for housing a hard disk, and
- a printed wiring board (112 in Fig. 5) provided with a circuit for controlling the hard disk.

Regarding claim 5, heating the adhesive layer to exhibit adhesiveness, do not distinguish over the APA and Matsuura et al., because only the final product/structure is relevant, not forming the adhesiveness using the "heating", "compressing", "pressurizing and heating" or "softening, curing or melting". Note that a "product by process" claim is directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In

re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and In re Marrosi et al., 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 706.03(e).

Response to Arguments

3. Applicant's arguments filed on 05-20-05 have been fully considered but they are not persuasive.

A. Applicant contends that Matsuura et al's reference is non-analogous art since it is not in the same field as that of the invention.

However, this is traversed because Matsuura et al. teach using a variety of compositions of the insulating adhesives to provide improved adhesion/bonding between a variety of substrates/layers in chip packaging and interconnection under different processing conditions, the substrates including conventional substrates such as ceramic, plastic/laminate/PWB, leadframe, etc (sections 0229 and 0230).

Furthermore, Matsuura et al's teaching is reasonably pertinent to the adhesion/bonding related problems.

B. Applicant contends that Matsuura et al's adhesive is used to prevent cracks during the solder reflow and has a water absorption of no more than 0.3 wt. %.

However, Matsuura et al's adhesive further provides improved adhesion under compression and heat treatment and the temperature of the heat treatment is higher than normal ambient temperature (see sections 0206-0212). Therefore, combination of Matsuura et al. with the APA is proper.

C. Applicant contends that the claim limitations "exhibits adhesiveness when heated" are not process limitations, but structural features of the adhesive.

However, this is traversed since the claim limitations include heating the adhesive to a particular temperature above the normal/ambient temperature, which is directed to the heating process to exhibit the desired adhesiveness.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nitin Parekh whose telephone number is 571-272-1663. The examiner can normally be reached on 09:00AM-05:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9318.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAN or Public PAG. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAG system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). Any inquiry of a general nature or relating to the

Art Unit: 2811

status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

NP

06-14-05



NITIN PAREKH

PRIMARY EXAMINER

TECHNOLOGY CENTER 2800